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February 24, 2003

<u>Via Overnight Mail</u>

Stephen Birdsall, APCO
Imperial County Air Pollution Control District
150 South Ninth Street
El Centro, CA 92243

Re: <u>Preliminary Determination of Compliance for the Salton Sea Unit 6 Power Plant Project</u>

Dear Mr. Birdsall:

We represent the California Unions for Reliable Energy ("CURE"). CURE is a party to the Salton Sea Unit 6 Power Plant Project ("SSU6") proceeding before the California Energy Commission ("Commission"). We offer the following comments on the Preliminary Determination of Compliance ("PDOC") for the SSU6.

These comments were prepared with technical assistance from Phyllis Fox, Ph.D., PE, DEE, who has over 30 years of experience in the air quality field, and Steven Radis, M.S., who has over 16 years of numerical modeling experience and over 20 years of experience in conducting meteorological and climatological studies.

I. THE DISTRICT DID NOT PERFORM THE COMPLIANCE REVIEW REQUIRED BY DISTRICT RULE 207 D; THE DISTRICT MUST ISSUE A NEW PDOC THAT COMPLIES WITH ITS RULES

The Imperial County Air Pollution Control District ("ICAPCD" or "District") issued a document entitled "Preliminary Notice of Determination of Compliance with Applicable Rules" ("PDOC") pursuant to ICAPCD's Rule 207 D.9 for power plants. Rule 207 D.9 requires the Air Pollution Control Officer to conduct a determination of compliance review, which "shall consist of a review identical to that which would be performed if an application for a [sic] authority to construct had been received for the power plant," and "shall apply all provisions of this regulation [Rule 207] which apply to applications for an authority to construct." (Rule 207 D.9.b-c.)

The general conditions governing an authority to construct in Rule 207 D.6 require a number of components in an authority to construct, including the following:

- Compliance with all applicable APCD rules and regulations and the provisions of Division 26 of the Health and Safety Code. (Rule 207 D.6.a.)

- All conditions necessary to assure construction and operation of an emissions unit in the manner assumed in making the analysis to determine compliance with this regulation and all applicable APCD rules and regulations. (Rule 207 D.6.c.)

- All conditions necessary to assure compliance with the offset requirements of Rule 207. (Rule 207 D.6.d.)

- Daily emission limits which reflect applicable emission standards. (Rule 207 D.6.e.)

- Analysis of the potential to impact air quality, including visibility, of any Class I federal area. (Rule 207 D.6.f.)

The PDOC is missing most of the general conditions governing an authority to construct required by the District's rules. Under Rule 207 D.9.b, the PDOC itself must consist of a review identical to that which would be performed if an application for an authority to construct had been received for the power plant and shall apply all provisions of Rule 207. The PDOC recommends 13 permit conditions for the CEC to "consider" in the AFC. (PDOC, pp. 19-22.) The proposed conditions do not address the required analysis under Rule 207 and are not consistent with the level of detail and specificity normally found in a PDOC or with other permits for authorizations to construct issued by the ICAPCD for very similar facilities. The PDOC does not describe whether or when the required information will be gathered and whether or when subsequent analysis will be conducted. It is critical that complete information be provided in a preliminary determination to avoid depriving the public of the opportunity to comment on compliance with the air district's rules.

The PDOC does not ensure that the operation of SSU6 will not interfere with the attainment or maintenance of ambient air quality standards, nor does it ensure no net increase in emissions from new sources which emit 137 pounds per day or more of nonattainment pollutants or their precursors. Thus, the PDOC does not meet the legal requirements of the District's own rules or the other requirements for new source review under local, state and federal law. The District must issue a revised PDOC for public comment that complies with the law.

II. THE PDOC DOES NOT IDENTIFY FEDERALLY ENFORCEABLE OFFSETS IN VIOLATION OF FEDERAL, STATE AND LOCAL RULES

The PDOC proposes to permit a new major source of air pollution before it identifies federally enforceable offsets. This is prohibited by the federal Clean Air Act. The 1990 Clean Air Act Amendments mandate that adequate emission offsets be identified and federally enforceable before a state may issue any construction permit to a new major source in an area designated as nonattainment for National Ambient Air Quality Standards ("NAAQS"). Specifically, section 173(a)(1) of the Act authorizes states to issue new source permits only where the permitting agency determines that:

> [B]y the time the source is to commence operation, sufficient offsetting emissions reductions have been obtained, such that total allowable emissions from existing sources in the region, from new or modified sources which are not major emitting facilities, and from the proposed source will be sufficiently less than total emissions from existing sources[.] (42 U.S.C. § 7503(a)(1)(A); *see also* § 7503(c)(1).)

Subdivision (a) goes on to clarify this requirement as follows:

> Any emission reductions required as a precondition of the issuance of a permit under paragraph (1) shall be federally enforceable ***before such permit may be issued***. (42 U.S.C. § 7503(a)(5) (emphasis added).)

In the years since the 1990 Amendments, EPA has repeatedly affirmed, in regulations and guidance documents, that sufficient offsets must be both identified and enforceable prior to permit issuance. In a 1994 EPA Memorandum, the EPA Director wrote, "offsets must be federally enforceable ***before a permit to construct***

and operate may be issued, although the offsetting emissions reductions need not be achieved until the permitted source commences operation." (Memorandum from John S. Seitz, Director, EPA Office of Air Quality Planning and Standards, to all Regional Air Division Directors, Subject: "Offsets Required Prior to Permit Issuance," June 14, 1994.)

The Warren-Alquist State Energy Resources Conservation and Development Act ("Warren-Alquist Act") incorporates the Clean Air Act requirement that federally enforceable offsets be identified before a permit to construct and operate may be issued. Specifically, section 25523(d)(2) of the Warren-Alquist Act prohibits the Commission from finding conformity with applicable air quality standards unless the ICAPCD certifies that complete emissions offsets for the proposed facility have been identified and will be obtained by the applicant. (Pub. Res. Code § 25523(d)(2).) Section 25523(d)(2) goes on to state that "[t]he Commission shall require as a condition of certification that the applicant obtain any required emission offsets within the time required by the applicable district rules, ***consistent with any applicable federal*** and state ***laws*** and regulations, and prior to the commencement of the operation of the proposed facility." (Pub. Res. Code § 25523(d)(2).) As noted, the time to identify federally enforceable offsets under the federal Clean Air Act is ***before*** new source permits are issued. (42 U.S.C. § 7503(a)(5).)

Consistent with the Warren-Alquist and federal Clean Air Acts, the Energy Commission routinely requires that emissions offsets be identified and federally enforceable before a permit to construct may be issued. Most recently, a February 2003 Presiding Member's Proposed Decision for the Magnolia Power Plant Project in Los Angeles County found that "[p]ending evidence of the Applicant's complete offset package, we cannot find the proposed offsets comply with Public Resources Code, section 25523(d)(2)." (Presiding Member's Proposed Decision, Magnolia Power Plant Project (01-AFC-6), p. 124, February 2003.)

The District's rules also require identification of enforceable offsets before a permit may be issued. Rule 207 D.8.b requires that offsets required as a condition of an Authority to Construct "shall be Enforceable at the time of permit issuance and shall be in effect not later than the date of initial operation…."

The PDOC states, "offsets shall be acquired no later than the time when Unit 6 comes online." (PDOC, Condition 13, p. 22.) The PDOC does not identify any enforceable offsets. Accordingly, the PDOC's proposal to authorize new source construction prior to the Applicant's having identified and secured, federally enforceable offsets is, on its face, inconsistent with federal, state and local laws.

As we discuss below, the PDOC fails to identify the offsets that would be provided, failed to require that all emissions be offset, and failed to include any enforceable conditions among the proposed conditions it recommends to the CEC. Thus, the PDOC does not comply with any of these requirements.

III. UNDER NEW SOURCE REVIEW RULES, THE PDOC MUST IDENITFY OFFSETS FOR ALL STATIONARY SOURCE EMISSIONS ASSOCIATED WITH SSU6

New Source Review under the federal Clean Air Act and District Rule 207 A.1.b requires no net increase in emissions from new stationary sources which emit or have the potential to emit 137 pounds per day or more of any nonattainment pollutant or its precursors. The PDOC does not consider a number of new emissions sources that are part of the SSU6 stationary sources as identified in the AFC for SSU6.

Stationary source is defined broadly by ICAPCD Rules. "Source" is defined as follows:

> [A] specific device, article, or piece of equipment from which air contaminants are emitted, or the distinct place (such as with fires or other chemical activity) from which air pollutants are emitted. A Project or facility may have more than one Source and the term may be used to describe a group of "sources." (Rule 101.)

"Equipment" includes any article, machine, or contrivance that emits or has the potential to emit air contaminants. (Rule 101.) Rule 101 goes on to define "stationary source" as the following:

> [A]ny building, structure, facility, equipment, or emissions unit which emits or may emit any affected pollutant directly or as a fugitive dust emission. Building, structure, or facility includes all pollutant emitting activities, including emissions units, which:

1. are located on one or more contiguous or adjacent properties, and
2. are under the same or common ownership or operation, or which are owned or operated by entities which are under common control, and
3. belong to the same industrial grouping either by virtue of falling within the same two-digit standard industrial classification code or by virtue of being part of a common industrial process, manufacturing process, or connected process involving a common raw material.

An "emissions unit" is "an identifiable or piece of process equipment, such an article, machine, or other contrivance, which emits, has the potential to emit, or results in the emissions of any affected pollutant directly or as fugitive emissions." (Rule 101.)

The PDOC fails to consider emissions from ***all*** equipment and emission sources associated with SSU6, including well drilling, well flow testing, well rework, well flow run, plant commissioning, the dilution water heater, emergency diesel engines, fire water pump, and vent tank emissions. The PDOC implies that the "source" for purposes of identifying offsets is defined by the Commission's licensing authority. This approach is clearly inconsistent with the definition of "source" and "stationary source" under the ICAPCD's rules and with the Commission's authority. By failing to consider emissions from all emission sources, the PDOC naturally failed to identify offsets for all of the emissions from SSU6.

It is critical that the PDOC identify and require offsets for all sources of emissions in the SSU6 Stationary Source. The Stationary Source includes emissions from drill rigs, well drilling, well flow testing, well rework, plant commissioning, the dilution water heater, diesel engines, well flow run, and vent tank emissions, all of which the PDOC excludes from its offset analysis. Drill rigs, water heaters, diesel engines, and vent tanks constitute "equipment," or machines or pieces of process equipment, which emit or have the potential to emit air pollutants, and hence fall within the definition of "Stationary Source" under Rule 101. Well drilling, well flow testing, well rework, and well flow run are "Emissions Units" under the definition of Stationary Source, because they are identifiable operations, which emit, have the potential to emit, or result in the emissions of pollutants. Drill rigs are considered stationary sources in practice.[1] Thus, these Stationary Sources are subject to ICAPCD's new source review and emissions from these sources must be offset to avoid allowing a net increase in emissions of a nonattainment pollutant or its precursors.

Without identifying emissions offsets for all sources of emissions from the SSU6 Stationary Source in the PDOC, SSU6 will result in a net increase in emissions of nonattainment pollutants or their precursors in the Imperial County air district. This would be an unacceptable risk to the community and a violation of the District's New Source Review requirements and federal law.

IV. UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT, THE ENERGY COMMISSION MUST IDENTIFY OFFSETS FROM ALL PROJECT EMISSIONS

The California Energy Commission must evaluate the significance of SSU6's air quality impacts, pursuant to the California Environmental Quality Act ("CEQA"). (Pub. Res. Code §§ 21000 et seq.) This evaluation must include the entire "project" under the California Environmental Quality Act ("CEQA"). Based on the Applicant's AFC, the "project" consists of a resource production facility, a power generation facility and associated facilities in Imperial County, California. (AFC, p. 3-1.) Specifically, the "project" includes 10 production wells, well pads, above ground pipelines, brine steam handling facilities, a solids handling system, steam polishing equipment, two brine ponds, 7 injection wells, a geothermal power block, a condensing turbine/generator set, gas removal and abatement systems, a heat rejection system, a control building, a service water pond, transmission lines and other related facilities. (AFC, p. 3-1.) This entire development proposal – the construction and operation of 10 production wells, 7 injection wells, pipelines, transmission lines, the plant site and associated support structures – defines the scope of the project under CEQA.

The PDOC implies that the "project" for purposes of evaluating air quality impacts and identifying offsets is defined by the Commission's licensing authority over the power generation facility itself and not associated wells and pipelines. This approach constitutes "piecemealing" under CEQA and has been soundly rejected by the CEQA Guidelines, the courts and the Commission in previous cases.

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[1] *Air Quality Planning For Geothermal Development*, Geothermal Resources Council Bulletin volume 26 number 11, pp. 291-296, James E. Houck and David W. McClain (1997).

A. Definition Of A Project Under CEQA

"'Project' is given a broad interpretation in order to maximize protection of the environment." (*McQueen v. Board of Directors of the Midpeninsula Regional Open Space District* (1988) 202 Cal.App.3d 1136, 1143 [249 Cal.Rptr. 439].) The CEQA Guidelines, which are binding on the Commission, define "project" to mean "the whole of an action" that (1) may result in either a direct or indirect physical change in the environment and (2) involves the issuance of a permit or license from one or more public agencies. (14 Cal. Code Reg. § 15000, 15378.) The Guidelines explicitly state that "[t]he term "project" *does not mean* each separate governmental approval." (*Id.* at § 15378(c) (emphasis added).) Instead, the Guidelines require that when a project *can* be described as a development proposal subject to several governmental approvals, it *must* be described as a development proposal for the purpose of environmental analysis. (*Id.* at § 15378(d).) The California Supreme Court has explained that this approach ensures "that environmental considerations do not become submerged by chopping a large project into many little ones, each with a potential impact on the environment, which cumulatively may have disastrous consequences." (*Bozung v. Local Agency Formation Commission* (1975) 13 Cal.3d 263, 283-84 [118 Cal.Rptr. 249].)

This directive is critical here. The plant site containing the generating facility is only one piece of the overall SSU6 development proposal. The AFC describes the development proposal as 10 production wells, well pads, above ground pipelines, brine steam handling facilities, a solids handling system, steam polishing equipment, two brine ponds, 7 injection wells, a geothermal power block, a condensing turbine/generator set, gas removal and abatement systems, a heat rejection system, a control building, a service water pond, transmission lines and other related facilities. The production and injection wells are necessarily a part of the proposed SSU6 development. Drilling the wells, well flow testing, well rework, and well flow run are essential aspects of the SSU6 production and injection wells. The proposed wells and their associated well pads are located in the immediate vicinity of the plant site. Likewise, plant commissioning, the dilution water heater, diesel engines, and vent tank emissions are part of development and operation of the SSU6 project. This development proposal as set forth in the AFC constitutes the project for CEQA purposes.

Most importantly, SSU6 facilities will have combined environmental impacts that *will be understated and may not be mitigated* if the project description is limited to the plant site. This result would defeat the fundamental purpose of CEQA. "Only through an accurate view of the project may affected outsiders and pubic decision-makers balance the proposal's benefit against its environmental costs, consider mitigation measures, assess the advantage of terminating the proposal (i.e., the "no project" alternative) and weigh other alternatives in the balance." (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192-93 [139 Cal.Rptr. 396, 401].

B. The Project Is Not Defined By The Commission's Licensing Authority

The PDOC and ICAPCD staff suggest that the "project" for CEQA purposes is defined by the Commission's licensing authority. For example, the District has indicated that these offsets were not included in the PDOC because the CEC only has jurisdiction over the power plant itself and not the well-drilling aspects of the Project.[2] CEQA unequivocally rejects this approach.

In *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus,* the Court found an environmental impact report ("EIR") for a residential development inadequate where its project description excluded sewer expansion that was necessary to support the development. (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713 [32 Cal.Rptr.2d 704].) The sewer expansion had been analyzed in a separate EIR because that portion of the project fell within the jurisdiction of the community services district, while the residential development required the approval of the County Board of Supervisors. (*Id.* at 719, 731.) The Court rejected this dual analysis, explaining that the approach resulted in an improperly "curtailed" and "distorted" project description. Since "[a]n accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR," even if the final EIR was deemed to be adequate in all other respects, the selection and use of a "truncated project concept" violated CEQA. (*Id.* at 730.) The Court further explained that "because the project description was improperly truncated," the two separate analyses failed to disclose the true effects of the entire project. (*Id.* at 732-733.)

In this case, although production wells and resource transmission lines used in connection with a geothermal power plant do not require a license from the Commission under the definition of a geothermal power plant under Public

[2] Phyllis Fox personal communication with Harry Dillon, ICAPCD, February 19, 2003.

Resources Code Section 25120, the Commission may not artificially limit the scope of its CEQA analysis simply because it does not have licensing jurisdiction over all of the project components. To do so would improperly divide this single project into smaller individual subparts to avoid responsibility for considering the environmental impact of the project as a whole. (*See McQueen*, *supra,* 202 Cal.App.3d at 1144 [249 Cal.Rptr. 439]; *Orinda Ass'n v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, 1171 [227 Cal.Rptr. 688, 705]. Several courts have confirmed that a proponent's intended development plans define the proper scope of CEQA review.[3]

Consistent with these directives, the Commission consistently defines the appropriate scope of review to include associated well drilling and other related activities. The Commission's environmental review for the Sunrise Cogeneration and Power Plant included well drilling and other activities within the scope of review. (*See*, Committee Order on Scope of Review, AFC for the Sunrise Cogeneration and Power Plant, Docket No. 98-AFC-4 (June 4, 1999).) Similarly, for the Fourmile Hill Geothermal Development Project, the scope of environmental review included well drilling during construction and operation. (*Calpine Fourmile Hill Geothermal Development Project*, DEIR/DEIS, July 1997, pp. 4-219 – 4-255; FEIR/FEIS Volume II, Appendix F (September 1998).) Specifically, the environmental impact analysis for the Fourmile Hill Geothermal project included an air quality impact analysis of emissions from drill rigs, well drilling, well vents, power plant backup generators, valves, hydrogen sulfide abatement, mercury abatement, transmission line construction and other development, operation and upset activities. (*See Calpine Fourmile Hill Geothermal Development Project*, FEIR/FEIS Volume II, Appendix F.)

In this case, the SSU6 development proposal – the construction and operation of 10 production wells, 7 injection wells, pipelines, transmission lines, the plant site and associated support structures – defines the scope of the project under CEQA. Therefore, the PDOC must ensure that offsets from all project emissions are identified to enable the Commission to find that all air quality impacts from the project are mitigated. If emissions offsets are not identified in the Commission's

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[3] *See e.g., Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 829-30 [173 Cal.Rptr. 602, 607-08] (rejecting a project description that excluded water delivery facilities in another agency's jurisdiction from a mine development EIR); *Citizens Association for Sensible Development of Bishop v. County of Inyo* (1985) 172 Cal.App.3d 151, 156 [217 Cal.Rptr. 893, 896]; *McQueen, supra*, 202 Cal.App.3d 1136 [249 Cal.Rptr. 439]; *Laurel Heights Improvement Association v. University of California* (1988) 47 Cal.3d 376, 397 [253 Cal. Rptr. 426, 434].

environmental review of SSU6, there will be no environmental review of significant emissions associated with the project.[4]

V. THE PDOC DOES NOT COMPLY WITH THE DISTRICT'S RULES REQUIRING A DETERMINATION OF OFFSETS

A. NO_2 and PM10 Offsets Are Not Identified Or Required

Rule 207 A.1.b requires no net increase in emissions from new sources which emit or have the potential to emit 137 pounds per day or more of any nonattainment pollutant or its precursors. The Imperial County area is nonattainment for both the federal and California PM10 and ozone standards. (AFC, pp. 5.1-5, 5.1-7; PDOC, p. 6.) The emission inventory in the AFC indicates that emissions of both PM10 and NO_2, an ozone precursor, exceed 137 lb/day, as demonstrated by the following data:

Table 1
Daily PM10 Emissions (lb/day)

Source	NOx (lb/day)	PM10 (lb/day)	VOC (lb/day)	AFC Table
Well Drilling	623.2	25.7	8.6	G-2
Well Rework	276	11.4	3.6	G-2
Well Flow Testing		2,323		G-4
Plant Commissioning		2,408		G-5.2
Cooling Tower		83.8		G-8
Dilution Water Heater		3.2		G-9
Diesel Engines	1,025.6	17.3	21.8	G-11
Well Flow Run		2,328		Revised G-14
Vent Tank		5.2		G-15
TOTALS	**1,925**	**7,206**	**34**	

[4] It is sometimes the case that emissions offsets that comply with an air district's offset requirements do not adequately mitigate the project's impacts on air quality. For example, the source of the offsets may be too far from the emission source or creating the offsets may itself create environmental impacts. However, if offsets that meet the air district's rules are not even identified, then the Commission certainly cannot find that the air quality impacts of the project have been mitigated.

This table shows that the Project has the potential to emit more than 137 pounds per day of PM10 and NO_2. Thus, all PM10 and NO_2 emission increases must be offset under Rule 207 A.1.b.

The AFC indicates that annual PM10 and NO_2 emissions are as follows:

Table 2
Annual PM10 Emissions (ton/yr)

Source	NOx (ton/yr)	PM10 (ton/yr)	AFC Table
Well Drilling	124.2	5.1	G-2
Well Rework	6.9	0.3	G-2
Well Flow Testing		44	G-4
Plant Commissioning		8.6	G-5
Cooling Tower		15.3	G-8
Dilution Water Heater		0.6	G-9
Diesel Engines	4.3	0.1	G-11
Well Flow Run		12.7	Revised G-14
Vent Tank		0.9	G-15
TOTAL EMISSIONS	**135.4**	**87.6**	

Under the District's rules, an Authority to Construct shall include all conditions necessary to assure compliance with the offset requirements of Rule 207. (Rule 207 D.6.d.) A new stationary source, which will result in a potential to emit 137 pounds per day or more of nitrogen oxides, reactive organic compounds, carbon monoxide, sulfur oxides, or PM10, *shall offset all emissions increases* which cause the source to exceed the 137 pounds per day limit. (Rule 207 C.2.c (emphasis added).) Such sources must provide offsets for each calendar quarter equal to the emission increase for each calendar quarter, calculated in accordance with Rule 207 E, and multiplied by an offset ratio of 1.2. (Rule 207 C.3.) At an offset ratio of 1.2, Table 2 shows that the Project must provide 162.5 ton/yr of NO_2 offsets and 105.1 ton/yr of PM10 offsets.

The PDOC violates Rule 207 C.3, because it does not require these offsets. The PDOC's proposed offset provisions are contained in Condition 13, which provides:

> The Permittee shall provide offsets at a ratio of a minimum 1.2 to 1. 16.6 tons (13.8 x 1.2) of offsets shall be provided for hydrogen sulfide and 18.4 tons (15.3 x 1.2) for PM10. The offsets shall be acquired no later than the time when Unit 6 comes online. (PDOC, Condition 13, p. 22.)

The PDOC's proposed offsets are significantly less than the required 162.5 ton/yr of NO_2 offsets and 105.1 ton/yr of PM10 offsets. Thus, the PDOC does not identify all required offsets for all emissions sources associated with SSU6. The PDOC, Condition 13, only proposes to offset 15.3 ton/yr of PM10,[5] which it characterizes as cooling tower drift emissions. (AFC, Table G-8.) However, all of the emissions in Table 2 must be offset to comply with the local, state and federal laws, not just the cooling tower PM10 emissions. The failure to include this analysis in the PDOC deprives the public of an opportunity for meaningful review of the air quality impacts and does not satisfy the Energy Commission's requirements to identify all of the offsets required for SSU6 in the PDOC so that they may be subject to public review.

B. The PDOC Fails To Identify Offsets For Drill Rig And Related Emissions

As part of the review process for the proposed SSU6 project, the Applicant, CE Obsidian Energy LLC ("CE Obsidian"), the air district and the Commission must clearly identify whether the drill rigs and associated well drilling and well flow emissions will be permitted locally, under a statewide program or otherwise. The PDOC suggests that emissions for well drilling and well flow testing will be offset on a permit by permit basis. (PDOC, pp. 16-17.) The District indicates that the applicant intends to only use drill rigs permitted under a statewide program.[6] The applicant's response to CURE Data Request 9 states that "the Applicant will hire independent contractors that have already obtained the necessary permits for well drilling in Imperial County." (CE Obsidian Responses To CURE Data Requests, Set One (Nos. 1-98), (02-AFC-02), p. 5.) The Applicant has not clearly stated whether the well drilling will be authorized under a local or statewide permit. CE Obsidian cannot evade review of drill rigs and associated emissions by

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[5] However, the PDOC itself reports three different values for cooling tower drift emissions, 12.7 ton/yr on page 16, 13.8 ton/yr on page 17, and 12.6 ton/yr on page 26. These discrepancies should be resolved.

[6] Phyllis Fox personal communication with Harry Dillon, ICAPCD, February 19-20, 2003.

refusing to identify the type pf permit it will seek. The applicable requirements must be reviewed in the PDOC and in the Commission's environmental review process.

1. Drill Rigs For SSU6 May Not Be Authorized Under A Statewide Program

Section 209(e) of the Clean Air Act authorizes the EPA, after notice and opportunity for public hearing, to authorize California to adopt and enforce standards and other requirements relating to the control of emissions from certain nonroad engines or vehicles if State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. (42 U.S.C. § 7543(e)(2)(A).) Under this section of the Act, California is required to receive authorization from the U.S. EPA prior to enforcing its regulations for such nonroad equipment. (*See* 42 U.S.C. 7543(e)(2); *See Engine Manufacturers Association v. EPA*, 88 F.3d 1075 (D.C. Cir. 1996).)

In 1999, the California Air Resources Board ("CARB") developed a Statewide Portable Equipment Registration Program and adopted regulations for the program under sections 2450 to 2466 of Title 13 of the California Code of Regulations. To date, CARB has not received EPA authorization of the state's portable engine and equipment registration regulations that apply to drill rigs. Only after the State's program is authorized by the EPA, does the program restrict an air district's permitting and emission control requirements. (Health and Safety Code § 41753(b).)

In 1995, CARB received EPA authorization to enforce state regulations for heavy-duty off-road diesel cycle engine. (59 Fed. Reg. 48981 (September 21, 1995).) However, these regulations do not necessarily apply to the drill rigs that will be used for SSU6. (13 Cal. Code Regs. § 2420-2427.) The regulations only apply to heavy-duty off-road compression-ignition engines produced on or after January 1, 1996. (13 Cal. Code. Regs. §§ 2420(a)(1), 2421(a)(26).) In this case, there is no evidence in the record that the SSU6's drill rigs have new engines. In fact, documents obtained from the District show that C&L Drilling Co. drill rigs that are used in Imperial County have engines produced in 1982. Thus, unless PDOC includes a condition to require only 1996 engines produced on or after 1996, the statewide certification program for heavy duty off-road engines does not apply.

2. Even If Statewide Regulations Apply In This Case, NOx Emissions From Drilling Equipment Exceeds Allowable Limits.

Even if statewide portable engine regulations apply in this case, the District "shall enforce the statewide registration program, emission limitations, and emission control requirements" established by the state board in the same manner as a district rule or regulation. (Health and Safety Code § 41755(a).) State regulations, and therefore the District, shall ensure that emissions from portable equipment subject to the statewide registration program will not, in the aggregate, interfere with the attainment or maintenance of state or federal ambient air quality standards and the emissions from any one portable equipment engine, exclusive of background concentrations, shall not cause an exceedance of any ambient air quality standard. (Health and Safety Code § 41754(a)(1).) Moreover, under the state program, the District must preserve the most stringent requirements adopted by a District which require the use of best available control technology (BACT) for each class or category of portable equipment. (Health and Safety Code § 41754(a)(2).)

For purposes of registration, a portable engine and the equipment unit it serves are considered to be separate emissions units and require separate permit applications. (13 Cal. Code. Regs. § 2453(b).) "Equipment unit" is defined as "equipment that emits air contaminants over and above those emitted from the portable engine and is associated with, and driven solely by, any portable engine. Equipment units may include equipment necessary for the operation of a portable engine (e.g., fuel tanks)." (13 Cal. Code. Regs. § 2452(h).) As such, each drill rig must obtain a permit for each engine and the unit as a whole.

For portable equipment registered under the statewide portable equipment program, Rule 207 C.2.h.4 exempts equipment which does not emit more than 25 ton/yr of a single pollutant during a 12 month period at any one location, provided BACT is utilized. This regulation suggests that offsets are required under the District regulations, even if an engine or equipment unit has a statewide permit, unless it uses BACT and emits less than 25 ton/yr. However, the PDOC does not require BACT for the drill rigs.

For registered portable engines, state regulations require that NOx emissions in nonattainment areas not exceed 10 tons per district per year per engine. (13 Cal. Code. Reg. § 2456(j)(3).) The Project area is nonattainment for ozone, and NOx is an ozone precursor. The PDOC indicates that two or three drill rigs would be used. (PDOC, p. 6.) The AFC indicates that a rig contains four, 450-hp diesel engines, each of which will emit 6.49 lb/hr of NOx and operate at an average load factor of 44.3%. (AFC, Table G-2.) The District's C&L Drilling Permit suggests a drill rig may contain up to five separate engines total 2,429 hp, 30% more than disclosed in the AFC and used to estimate emissions. Thus, assuming two rigs operating simultaneously, NOx emissions from a single engine on a single rig used to drill six well per year, would be 12.6 ton/yr.[7] The emissions would be even higher if larger rigs, comparable to those used by C&L Drilling, were used. These emissions exceed the state limit of 10 tons per district per year per engine.

Second, state regulations limit nonresident[8] engines to 100 pounds of NOx per engine per day. (13 Cal. Code. Regs. § 2456(j)(6).) This limit would be exceeded if the load factor for any given engine exceeds 64% during any 24 hour period . The emissions in the AFC assume a "typical fuel use rate" of 44.3%, based on an un-named contractor's data for geothermal wells in the Salton Sea area. (CE Obsidian Responses To CURE Data Requests, Set One (Nos. 1-98), (02-AFC-02), p. 6-7.) This value is not only unsupported, but it is inconsistent with typical load factors for drill rigs reported elsewhere. The U.S. EPA, for example, recommends a load factor of 75% for drill rigs.[9] The applicant provided a source test on three 450-hp engines on a representative drill rig, in response to CURE Data Request 242. (CE Obsidian Responses To CURE Data Requests, Set Three (Nos. 237-275), (02-AFC-02), Attachment 242.) This source test was conducted at 74% load, presumably because this is a normal operating load for these engines.[10] Finally, the load can vary over a

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[7] NOx emissions from a single 450-hp engine used on a drill rig: (6.49 lb/hr)(0.443)(24 hr/day)(61 day/well)(6 well/yr)/2000 lb/ton = 12.6 ton/yr per engine. (AFC, Table G-2.)

[8] Under 13 Cal. Code Regs. § 2452(gg), a resident engine means: (1) a portable engine that at the time of applying for registration, has a current, valid district permit or registration issued in accordance with local district requirements and an application for registration is submitted to the Executive Officer before July 1, 2001; or (2) a portable engine that resided in the State of California at any time during calendar year 1995 and an application for registration is submitted to the Executive Officer no later than July 1, 2000; or (3) a portable engine where registration becomes mandatory pursuant to section 2451(d) of this article. [Note: The owner or operator shall provide sufficient documentation to prove the portable engine's residency to the satisfaction of the Executive Officer. Examples of adequate documentation are valid permits issued by a district, tax records, and usage or maintenance records.]

[9] U.S. EPA, Nonroad Engine and Vehicle Emission Study – Report, EPA Report 21A-2001, November 1991.

[10] SCEC, Compliance Test Report Prepared for Kenai Drilling Limited, Rig 44, Santa Clara Avenue Field, Oxnard, California, October 24, 1996.

wide range, from less than 20% to 100%, during the course of drilling. Based on AFC emission factors, the daily NOx emissions from one 450-hp engine would be 117 lb/day for 75% load.[11] Unless a permit specifically restricts each engine on a rig to only 64% load on an average daily basis, NOx emissions could easily exceed 100 lb/day for the proposed 450-hp engines that would presumably be used to drill the Project's wells. Alternatively, if the rigs used larger engines than the four 450-hp engines assumed in the AFC, the daily emissions could exceed the 100 lb/day threshold at a lower operating load than 64%.

CE Obsidian must disclose whether SSU6 proposes to construct and operate with drill rigs under a local or statewide permit. In either case, the applicant must secure a local permit from the ICAPCD and obtain offsets for well drilling, even if the proposed rig holds a statewide permit with appropriate operating restrictions, to assure that emissions remain below 100 lb/day of NOx and 10 ton/yr of NOx. (Health and Safety Code §§ 41754(a)(1), 41755(a).) This offset obligation must be disclosed in the PDOC.

C. Diesel Engines Are Not Exempt From Offset Requirements Under District Rules

The District has indicated that SSU6's three emergency diesel engines are exempt from offset requirements under the ICAPCD's rules because they will operate less than 100 hours per year.[12] However, the district's rules only exempt equipment "to be used exclusively as emergency standby equipment for non-utility electrical power generation…" (Rule 207 C.2.f.) Diesel engines would be used for utility electrical power generation and to operate the fire water pump. Thus, this exemption does not apply, and offsets must be provided for the three diesel engines.

D. APCD ERC Bank Inventory Is Inadequate To Offset SSU6 Emissions

Under District Rule 207 C.4.c., offsets for new or modified Stationary Sources shall occur during the same time period as the Stationary Source will operate, unless the offsets meet the emission reduction credit ("ERC") provisions of the District's rules and are approved by the Air Pollution Control Officer and the California Air Resources Board. The District maintains a community bank for the

[11] Daily NOx emissions from a 450-hp rig engine: (6.49 lb/hr)(24 hr/day)(0.75) = 116.8 lb/day.
[12] Phyllis Fox personal communication with Harry Dillon, ICAPCD, February 19, 2003.

purpose of providing offsets in accordance with procedures and limitations in District rules 207, 214 and 215.

The PDOC asserts that emission reductions will be available through the ICAPCD's ERC Bank for the well drilling and well flow testing emissions. However, the current ICAPCD ERC Bank Inventory, presented in the PDOC at the bottom of page 17, shows that there are not enough permanent PM10 or NO_2 ERCs in the inventory to offset the well drilling and well flow testing emissions, let alone all of the other emissions, summarized above, but omitted from the PDOC's discussion. Thus, the PDOC has provided no evidence that the Project's emissions can be offset, as it must to do comply with rules 207, 214 and 215.

In addition, the PDOC is not clear on whether agricultural burn PM10 offsets can be used for SSU6, particularly for the continuous sources. Applications for ERCs from agricultural burns must demonstrate that the credits will meet *all* the requirements of Rule 214 and applicable provisions in Rule 207. (Rule 214 C.3.d.) An ERC generated by reducing agricultural burning may only be utilized to the full extent of the banked amount for a 2 year period commencing on the date the ERC Certificate is issued. The PDOC does not identify when the ERC Certificate was issued. If an ERC commences on the second anniversary of the ERC certificate date, the banked amount shall be reduced by ¼ of the banked amount. (Rule 214 C.3.c.) The PDOC does not demonstrate compliance with the District's rules governing ERCs.

Further, to comply with the public review requirements of CEQA, the Warren Alquist Act, and the federal Clean Air Act, all of the offsets required for a Project must be disclosed in the PDOC and their source must be identified. The source of the offsets must be disclosed to ensure that any secondary impacts associated with the offsets are also identified and mitigated.

E. The PDOC Does Not Offset PM10 Precursors In Violation Of Rule 207 A.1.b

District Rule 207 A.1.b requires no net increase in emissions from any new source which emit or has the potential to emit 137 lb/day or more of any nonattainment pollutant or its *precursors*. Under ICAPCD rules, a precursor is "a directly emitted air pollutant that, when released into the atmosphere, forms or causes to be formed or contributes to the formation of a secondary pollutant for which a State or National Ambient Air Quality Standard has been adopted, or whose presence in the Atmosphere will contribute to the violation of one or more State or National Ambient Air Quality Standards." (Rule 101.) Under the CAA, the control requirements for major stationary sources of PM10 shall also apply to major stationary sources of PM10 precursors. (42 U.S.C. § 7513a(e).) In June 2002, the EPA determined that ammonia (NH3) is a PM2.5 precursor. (67 Fed. Reg. 39602, June 10, 2002; 40 C.F.R. § 51.30.)

As discussed above, the area is nonattainment for PM10. The PDOC acknowledges that H_2S (PDOC, p. 8: H_2S as secondary sulfate) and NH_3 (PDOC, p. 16) are precursors to PM10. The Project would emit more than 137 lb/day of these two PM10 precursors, as shown in the following Table:

Table 3
Daily H_2S And NH_3 Emissions (lb/day)

Source	H_2S (lb/day)	NH_3 (lb/day)	AFC Table
Well Drilling			G-2
Well Rework			G-2
Well Flow Testing	424.8	1,699	G-4
Plant Commissioning	424.8	1,699	G-5.2
Cooling Tower	58.6	14,691	G-8
Dilution Water Heater	16.3	397.0	G-9
Diesel Engines			G-11
Well Flow Run	424.8	1,699	Revised G-14
Vent Tank	2.8	88.8	G-15
TOTALS	**1,352**	**20,274**	

Thus, the Project must provide PM10 offsets for these precursors. The annual emissions that must be offset are:

Table 4
Annual H_2S And NH_3 Emissions (ton/yr)

Source	H_2S (ton/yr)	NH_3 (ton/yr)	AFC Table
Well Drilling			G-2
Well Rework			G-2
Well Flow Testing	8.6	34.3	G-4
Plant Commissioning	17.5	113.3	G-5
Cooling Tower	10.7	2,681.1	G-8
Dilution Water Heater	3.0	72.4	G-9
Diesel Engines			G-11
Well Flow Run	2.4	9.8	Revised G-14
Vent Tank	0.5	16.2	G-15
TOTALS	**42.7**	**2,927.1**	

At an offset ratio to 1.2 to 1, the Project must provide 3,564 ton/yr of PM10 offsets, to achieve no net increase in PM10 precursors, as required by Rule 207 A.1.b. The information provided by the applicant in response to CEC Data Request 9 and summarized by the District in the PDOC, page 17, indicates that there are not enough PM10 offsets available in the District to net out these emissions.

VI. PRECONSTRUCTION MONITORING IS REQUIRED

The District's regulations require an air quality impact analysis. (Rule 207 F.) An air quality impact analysis requires that emissions be estimated, a dispersion model be used to estimate the increase in ambient concentrations, and the modeled increments be added to existing background concentrations to determine if the Project causes or contributes to a violation of an ambient air quality standard. This review process requires representative background ambient air quality data.

The PDOC states that there are no nearby, representative ambient air quality data. (PDOC, Summary.) The AFC's modeling, which the District relies on, used a station at Calexico, which is affected by cross-border traffic. Thus, even though the AFC reported that the Project would cause or contribute to violations of ambient air quality standards, in violation of Rule 207 F, the District dismisses these violations, arguing that the background data is not representative of the site, rather than requiring a responsive analysis, as it must under its regulations. (PDOC, pp. 7 – 10.)

Rule 207 F is in the Imperial County State Implementation Plan. Thus, ICAPCD must follow federal guidance in performing the requisite air quality impact analysis. In the absence of representative background data, U.S. EPA guidance recommends that at least 12 months of representative background data be collected. (NSR Manual, p. C.17.) In particular, as here, if a potential threat to an ambient air quality standard is identified by modeling, continuous monitoring data is required. (NSR Manual, p. C.18.) Alternatively, for non-isolated sources, as here, the U.S. EPA *Guideline on Air Quality Models*, cited specifically in Rule 207 F.2, recommends the use of a multi-source model to establish the impact of nearby sources and all other sources.[13] Thus, the District should require at least 1-year of preconstruction monitoring data or a multi-source model analysis that complies with the EPA Guideline.

VII. THE PROPOSED CONDITIONS WOULD ALLOW VIOLATIONS OF THE H_2S AMBIENT AIR QUALITY STANDARD

The applicant has proposed to mitigate "normal" Unit 6 H_2S emissions of 13.8 ton/yr by applying H_2S controls at the existing Leathers or Elmore facilities to generate offsets at a minimum 1.2 to 1 ratio. This is incorporated in Condition 13 in the PDOC and characterized as "a mitigation measure for H_2S and secondary PM10." (PDOC, p. 17.) However, far more H_2S offsets are required to mitigate for H_2S and secondary PM10 impacts.

A. The PDOC Proposal To Mitigate H_2S Emissions By Applying Controls At The Existing Leathers Or Elmore Facilities Is Vague

Rule 207 D.6.c requires that all conditions necessary to assure construction and operation of an emissions unit assumed in making the analysis to determine compliance with all rules and regulations must be included in the Authority to Construct. The Energy Commission Staff requires the same specificity to perform its analysis, noting: "We need to know exactly what you are proposing to do to lower

[13] 40 CFR 51, Appendix W, Guideline on Air Quality Models, Section 9.2.3, p. 412.

actual operational emissions at the identified facility."[14] The PDOC does not, however, explain how the H_2S emissions at either Elmore or Leathers would be controlled, beyond noting that it will likely use biofilters. (PDOC, p. 13.) Further, Condition 13, only identifies the amount of offsets required to offset a portion of the emissions, but contains no specific operational and emission limits or monitoring to ensure that the emission reductions will actually occur. The PDOC contains none of the conditions necessary to assure that these H_2S offsets would actually be achieved to comply with Rule 207 D.6.c.

B. All H_2S Emissions Will Not Be Mitigated

The PDOC asserts that "all H_2S emissions from Unit 6 will be mitigated by applying controls at the Leathers or Elmore (38 Mwe) power plants…" (PODC, Summary.) This is not correct. The offset proposal represents only about 30% of the total H_2S that would be emitted, as demonstrated in Table 4 above. Monthly monitoring reports provided by the APCD indicate that Elmore emitted about 5.5 lb/hr of H_2S between 1998 and 2001 and Leathers emitted about 16 lb/hr of H_2S between 1999 and 2002, or a total of about 21.5 lb/hr. While retrofitting Leathers and/or Elmore with biofilters to remove 99%+ of the H_2S would provide sufficient H_2S reductions to offset 13.8 ton/yr of H_2S at a 1.2 to 1 offset ratio, it would not provide sufficient H_2S reductions to offset 100% of the Project's increase in H_2S emissions, which are PM10 precursors. Table 3 indicates that reductions amounting to about 56 lb/hr would be required to mitigate 100% of the Project's H_2S and secondary PM10 impacts. Removing 99%+ of the H_2S from Leather and Elmore would only reduce H_2S emissions by about 21 lb/hr or only about 38% of the required reduction. Therefore, all H_2S emissions associated with SSU6 will not be mitigated as set forth in the PDOC.

C. H_2S Air Quality Impacts Remain Significant After Mitigation

Rule 207 requires "[i]n no case shall emissions from a new or modified Emissions Unit, cause or make worse the violation of an Ambient Air Quality Standard." (Rule 207 F.1.) The AFC's modeling indicates that the Project's H_2S emissions from well flow testing, plant commissioning (AFC, Table 5.1-47), and well flow run and plant startup (AFC, Table 5.1-51) would violate the 1-hour California H_2S standard. Thus, additional mitigation for these H_2S emissions is required to

[14] E-mail from J.M. Loyer, CEC, to Bernard Raemy, Paul Richins, and Matthew Layton, Re: Salton Sea Unit 6: Proposed Geothermal Project – Air Protocol Addendum 1, May 6, 2002.

comply with Rule 207 F.1 and to mitigate this significant impact under CEQA. The PDOC must be modified to require additional H_2S offsets to assure that ambient air quality standards are not violated.

Further, the Elmore and Leather facilities are 3 to 4 miles from SSU6. (PDOC, p. 1.) The AFC's modeling did not evaluate the spatial differences in impacts between the proposed SSU6 Project and emission reductions from these existing facilities, located 3 to 4 miles away. It is likely that emission offsets at these existing facilities will result in local improvements to local air quality in the vicinity of these facilities, while there will still be localized increases in ambient H_2S levels around the SSU6 Project. The PDOC should be revised to evaluate the actual impact on air quality of the proposed reductions at Elmore and/or Leathers.

VIII. STATEWIDE COMPLIANCE NOT DEMONSTRATED

The District's rules require, in this case, that all major stationary sources owned, operated, or controlled by CE Obsidian Energy LLC or its affiliates in the state of California be in compliance or on a schedule for compliance with all applicable emission standards and limitations before a valid Authority to Construct permit may be issued to SSU6. (District Rule 207 C.5.c.) The rule applies not only to the corporation that is constructing the plant, but also to its owners and any affiliates that its owner has a controlling interest in. The SIP and the federal Clean Air Act impose nearly identical requirements. (42 U.S.C. § 7503(a)(3).) The AFC and the PDOC indicate that the applicant has not demonstrated compliance with these requirements of local, state and federal law.

Specifically, the PDOC is invalid because the applicant has not submitted a certificate of compliance with Rule 207 C.5.c. CE Obsidian Energy LLC must submit a sworn statement, indicating that all major stationary sources owned or operated by the corporation or its affiliates in the state of California are either in compliance, or are on an approved schedule of compliance, with all applicable emission limitations and standards, including those in the District Rules, California's SIP, and the federal Clean Air Act. The PDOC is silent on this issue. The PDOC should be revised to summarize the applicant's current compliance history in the ICAPCD and elsewhere in the state and append a certified statement from the applicant. In addition, this issue must be addressed in the PDOC in order to allow public review and comment.

IX. THE PDOC VIOLATES RULE 207 C.1 BY NOT REQUIRING BACT

Best Available Control Technology ("BACT") must be applied to any emission unit that has a potential to emit of 25 lb/day or more of any nonattainment pollutant (Rule 207 C.1.a) or to any unit that has H_2S emissions of 55 lb/day or more. (Rule 207 C.1.c.) BACT is "the most effective emission Control Device, emission limit, or technique which has been achieved in practice for such class or category of Source…" (Rule 101.) A "control device" is any device for reducing emissions to the atmosphere. (Rule 101.)

BACT for NOx is required for the drill rig engines, each emergency diesel engine, the fire pump, and well testing emissions. (Table 1; AFC, Table G-11.) BACT for PM10 is required for the drill rig engines, well flow testing, plant commissioning, the cooling tower, and well flow run emissions. (Table 1.) In addition, BACT is required for H_2S for well flow testing, plant commissioning, the cooling tower, and well flow run emissions. (Table 3.) The PDOC concludes that it has applied BACT for some of these sources, but does not contain a top-down analysis to support its conclusions, nor has it proposed BACT for all of these sources. We discuss two of the omitted sources, emergency and nonemergency diesel engines. However, the District must additionally address BACT for well flow testing, plant commissioning, and well flow run emissions.

A. The PDOC Contains No BACT Analysis

BACT is selected using a five-step process, referred to as the top-down process. These steps are detailed in Section B of the NSR Manual[15] and are used to identify and document BACT decisions. These steps from NSR Manual, Table B-1 are:

1. Identify all control technologies (including lowest achievable emission rate or LAER)

2. Eliminate technically infeasible options

3. Rank remaining control technologies by control effectiveness

[15] U.S EPA, New Source Review Workshop Manual. Prevention of Significant Deterioration and Nonattainment Permitting, Draft, October 1990.

4. Evaluate the most effective control and document results

5. Select BACT

In brief, the top-down process requires *all* available control technologies to be ranked in descending order of effectiveness. The PDOC does not follow this or any comparable process. Instead, the PDOC merely states, with no support, what it believes is BACT for a limited subset of the sources that require BACT. The PDOC must be revised to document its BACT conclusions.

B. The PDOC Does Not Require BACT For Emergency Diesel Generators

The Project includes 3,318 hp[16] of diesel standby power generators to operate all control systems and electrical pumps in the event of a power failure. In addition, the Project includes a 290-hp diesel fire pump. (AFC, Table G-11; PDOC, p. 14.) The AFC, Table G-11, indicates that NOx emissions from each of these engines individually exceeds the BACT threshold of 25 lb/day by a substantial amount, thus requiring BACT for each engine.

BACT is "the most effective emission Control Device, emission limit, or technique which has been achieved in practice for such class or category of Source…" (Rule 101.) The PDOC Rules Applicability Summary states, with no analysis whatsoever, that NOx BACT for these engines is less than 6.9 g/hp-hr or < 140 lb/hr for NOx using EPA/CARB certified engines. (PDOC, p. 4.) However, the proposed conditions in Section H of the PDOC do not require any BACT for these engines. (PDOC, pp. 19-22.)

The PDOC's proposed limit is higher than the emission factors used in the AFC to estimate uncontrolled emissions, thus clearly demonstrating that the PDOC has not required BACT. The NOx emissions from the 471-hp engine were estimated assuming a NOx emission factor of 4.68 g/hp-hr, resulting in 4.86 lb/hr NOx. The NOx emissions from the 2,847-hp engine were estimated with a NOx emission factor of 5.47 g/hp-hr, resulting in 34.2 lb/hr of NOx. The NOx emissions from the fire pump were estimated with a NOx emission factor of 5.7 g/hp-hr, resulting in 3.64 lb/hr of NOx. (AFC, Table G-11.) Thus, clearly, the PDOC has not required

[16] The PDOC claims 2300 kw of electrical generation, which is equal to 3,084 hp, while the AFC, Table G-11, shows that 3,318 hp would be used. This discrepancy should be resolved.

BACT for these engines. In fact, much lower NOx limits have been permitted and achieved in practice on emergency standby diesel engines.

The PDOC contains only a summary statement of proposed BACT limits for these engines. Neither the PDOC nor the supporting files provided to CURE contain any of the components of a formal BACT analysis, discussed in Comment IX.A. The PDOC does not identify all feasible control technologies. The PDOC does not review permit decisions from the U.S. EPA RACT/BACT/LAER Clearinghouse and other sources, including BACT clearinghouses maintained by the South Coast Air Quality Management District ("SCAQMD"), the San Joaquin Valley Unified Air Pollution Control District ("SJVUAPCD"), and the California Air Resources Board ("CARB"). The PDOC does not evaluate the feasibility of control technologies. ICAPCD simply stated what it believed BACT to be, without doing any of the requisite research or providing any documentation or justification for its choice. A formal BACT analysis would have disclosed that lower NOx emission limits have been permitted and achieved in practice on similar engines.

A review of BACT clearinghouses identified the following BACT determinations for emergency diesel engines (Ex. 1):

Table 5
NOx BACT Determinations for Emergency Diesel Engines

Facility	Location	NOx Limit g/bhp-hr	Control Method[b]	Engine
LA Times	SCAQMD	1.5	SCR	Detroit 2340 hp
Power Systems	SCAQMD	4.17	T, A	Cat 685 hp
Power Systems	SCAQMD	4.17	T, A	Cat 610 hp
Applicant Proposal		4.68		290-2847 hp
California Daries	SJVUAPCD	4.95	PCV	Cummins 208 hp
Generac Corp	SCAQMD	4.72	T, A	Generac 295 hp
Generac Corp	SCAQMD	4.72	T, A	Generac 267 hp
Power Systems	SCAQMD	4.8	T, A	Cat 536 hp
Power Systems	SCAQMD	4.8	T, A	Cat 471 hp
Cummins Cal-Pacific	SCAQMD	4.8[a]	T, A	Cummins 470 hp
Cummins Cal-Pacific	SCAQMD	4.8[a]	T, A	Cummins 395 hp
Power Systems	SCAQMD	6.19	T, A	Cat 764 hp
Kearney Ventures	SJVUAPCD	6.63	T, A	Cummins 208 hp
District Proposal		**6.9**	**None**	

[a] NOx + HC <4.8 g/bhp-hr
[b] T = turbocharged; A = aftercooled. Engine must be a USEPA nonroad certified compression engine as evidenced by the manufacturer's engine tag.

Table 5 demonstrates that the lowest BACT determination for emergency diesel engines (permitted to operate 125 hrs/yr) is 1.5 g/bhp-hr, achieved using SCR. Other similar emergency generators have been equipped with SCR in Europe. (*See* HUG vendor lists and case studies in Exhibit 2.) The HUG list in *Reference List January 2001 Stationary Combustion Engines* in Exhibit 2 separately indicates whether an SCR, oxidation catalyst ("OXI"), or particulate filter ("filter") is installed. Thus, this constitutes BACT for these engines, unless it is demonstrated that this limit is not achievable in this application. (Rule 101.)

The next highest NOx emission level is 4.17 g/bhp-hr, achieved using U.S. EPA nonroad certified Tier 2 engines equipped with turbocharging and aftercooling. In its review of BACT for emergency engines in July 2002, the SCAQMD concluded that "Tier-2 compliant emergency diesel engines are technically feasible and commercially available." (SCAQMD 7/02,[17] p. ES-2.) "Tier 2 engines are clearly available for emergency duty. Staff was able to identify five Tier-2 compliant diesel engines that have been in service for 12 months or more without significant operational problems." (SCAQMD 7/02, p. ES-3.) Larger engines, >750 hp, do not have to meet Tier 2 standards until January 1, 2006. However, laboratory test results indicate that the Tier 1 engines were nearly compliant with Tier 2 NOx + ROG standards in 2001. (SCAQMD 7/02, pp. 2-7/8.)

The District defines BACT to be "[t]he most effective emission Control Device, emission limit, or technique which has been achieved in practice for such class or category of Source unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable." (Rule 101.) The above information indicates that BACT for the emergency engines is an emission limit of 1.5 g/bhp-hr. This limit can be achieved using SCR. Thus, the District should revise the PDOC to require BACT for the emergency diesel engines and impose appropriate permit limits and compliance verification procedures.

C. The PDOC Does Not Require BACT For Drill Rig Diesel Engines

The PDOC Rules Applicability Summary states, with no analysis whatsoever, that NOx BACT for these engines is "turbo charged timing retard, and other emission devices if required." (PDOC, p. 2.) The PDOC is silent on PM10 BACT. The proposed conditions in Section H of the PDOC do not require any BACT for these engines. (PDOC, pp. 19-22.) As demonstrated below, BACT for NOx for these engines is an emission limit 0.15 g/bhp-hr or less, achieved using SCR. BACT for PM10 for these engines is an emission limit of 0.02 g/bhp-hr, achieved using a soot filter.

1. BACT For NOx For Nonemergency Diesel Engines

A review of BACT clearinghouses and other sources identified the following NOx BACT determinations for nonemergency diesel engines:

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[17] South Coast Air Quality Management District (SCAQMD), Preliminary Draft Staff Report for Proposed Amended Best Available Control Technology (BACT) Guidelines, Part D – Non-Major Polluting Facilities, Regarding Emergency Compression Ignition (Diesel) Engines, July 2002. Available at http://www.aqmd.gov/bact/MSBACT_Staff%20Report.doc

Table 6
NOx BACT Determinations for Nonemergency Diesel Engines

Facility	Location	NOx Limit g/bhp-hr	Control Method[a]	Engine	Exhibit
CARB	Statewide	0.15	SCR		CARB 7/02[18]
Guideline 3.3.12	SJVUAPCD	0.15	SCR	>50 hp	3
Lane Construction	MA	0.55	SCR	Cat 1220 hp	5
Block Island Power	RI	0.65	SCR	Cat 1648 hp Cat 2336 hp	6
Rock Island Sand & Gravel	SJVUAPCD	0.8	SCR	Cummins 685 hp	4
Kirkwood Resort	CA: Great Basin	0.9	SCR	6 Cat 853-1195 hp	7
Kiewit Companies	NV	1.23	SCR	3 Cat 537 hp	8
Okemo Mountain	VT	1.6	SCR	Cat 2 MW	9
BACT Determination	CA: BAAQMD	1.5	SCR+TR+T	>175 hp	10
CR Briggs	CA: Great Basin	1.9	SCR	4 Cat 1600 hp	11
Applicant Proposal		**6.55**	**None**		
District Proposal		**6.9**	**T, TR**		

[a] SCR = selective catalytic reduction; T = Turbocharged; TR = timing retard

This table demonstrates that the lowest NOx BACT determination for nonemergency diesel engines is 0.15 g/bhp-hr, achieved using SCR. CARB concluded that BACT for the control of NOx from reciprocating engines used in electrical generation (which are the same type of engines as used on drill rigs) is 0.15 g/bhp-hr. This is the most stringent level achieved in practice based upon 35 annual source tests done at 12 facilities and one CARB test. Some facilities were

[18] California Air Resources Board (CARB), Guidance for the Permitting of Electrical Generation Technologies, July 2002.

tested up to 4 times. (CARB 7/02, p. 6.) This is also the achieved in practice level determined by the SJVUAPCD in October 2002. (Ex. 3.)

In addition to these U.S. BACT determinations,, there are hundreds of diesel engines similar to those used on drill rigs in operation around the world that are controlled by SCR systems designed to remove 80% to over 95% of the NOx. Most of the operating units are in Europe and Japan. These systems are offered by a number of vendors including Steuler (Ex. 12), Miratech (HUG) (Ex. 2),[19] Johnson Matthey (Ex. 13), RJM (Ex. 13), and Engelhard (Ex. 14), among others. The HUG list in *Reference List January 2001 Stationary Combustion Engines* separately indicates whether an SCR, oxidation catalyst ("OXI"), or particulate filter ("filter") is installed. (Ex. 2.) Many of these engines are equipped with both an SCR system (to remove NOx) and a soot filter (to remove PM10).

Descriptions of the products offered by these vendors and installation lists are included in the cited exhibits, where available. The HUG vendor list in Exhibit 2 indicates that lower limits than those that have been permitted in the U.S. have been permitted and achieved in practice on engines currently operating in Europe. (Ex. 2) Steuler, Miratech, and Engelhard indicate that they will guarantee NOx reductions of 99+% on emergency and nonemergency diesel engines, which would yield an emission limit of <0.069 g/bhp-hr on a new, 6.9 g/bhp-hr certified diesel engine or a limit of 0.05 g/bhp-hr on a new USEPA Tier 2 engine.

2. BACT For PM10 For Nonemergency Diesel Engines

The PDOC does not discuss BACT for PM10 for the drill rig engines. The emission inventory in the AFC indicates that each engine could generate up to 25.7 lb/day of PM10. (AFC, Table G-2.) Actual emissions could be much higher as the applicant assumed that each rig would be equipped with only four 450-hp engines. However, permits the District has issued to drilling companies indicates that engines on drill rigs are larger, up to 867 hp. See permit issued to C&L Drilling Company. Thus, PM10 (and other emissions) could be higher than revealed in the AFC. PM10 BACT is required.

A review of BACT clearinghouses and other sources identified the following PM10 BACT determinations for nonemergency diesel engines:

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[19] Miratech represents the Swiss vendor, HUG, in the United States.

Table 7
PM10 BACT Determinations for Nonemergency Diesel Engines

Facility	Location	PM10 Limit g/bhp-hr	Control Method[a]	Engine	Exhibit
CARB	Statewide	0.02			CARB 7/02
Guideline 3.3.12	SJVUAPCD	0.02	-	>50 hp	3
Okemo Mountain	VT	0.04	SCR/OC	Cat 2 MW	9
Power Systems	SCAQMD	0.04	T,A	Cat 764 hp	1
Power Systems	SCAQMD	0.07	T,A	Cat 685 hp	1
Kiewit Companies	NV	0.076	SCR	3 Cat 537 hp	8
Block Island Power	RI	0.13	SCR	2 Cat 1648 hp & 2336 hp	6
Power Systems	SCAQMD	<0.15	T, A	Cat 471-536	1
Cummins Cal-Pacific	SCAQMD	<0.15	T, a	Cummins 395-470 hp	1
Applicant Proposal		**0.27**	**None**	**450 hp**	
District Proposal		**None**	**None**		

[a] SCR = selective catalytic reduction; T = Turbocharged; TR = timing retard

Table 7 demonstrates that the lowest PM10 BACT determination for nonemergency diesel engines is 0.02 g/bhp-hr. CARB concluded that BACT for the control of PM10 from reciprocating engines used in electrical generation (which are the same type of engines as used on drill rigs) is 0.02 g/bhp-hr. This is the most stringent level achieved in practice based upon 35 annual source tests done at 12 facilities and one CARB test. Some facilities were tested up to 4 times. (CARB 7/02, p. 6.) This is also the achieved in practice level determined by the SJVUAPCD in October 2002. (Ex. 3.) This level can be achieved using soot filters, which are widely used on diesel engines in Europe as well as in California. (*See* Exhibits 1 and 12 to 14.)

Thus, the District should revise the PDOC to require BACT for NOx and PM10 for the diesel engines used on the drill rigs and impose appropriate permit limits and compliance verification procedures. The above analysis indicates that NOx BACT is an emission limit of 0.15 g/bhp-hr, achieved using SCR, and PM10 is an emission limit 0.02 g/bhp-hr, achieved using a soot filter.

X. THE PDOC DOES NOT INDEPENDENTLY REVIEW AIR MODELING, WHICH UNDERESTIMATES IMPACTS

Rule 207 F requires that the applicant demonstrate that the Project will not cause or make worse violations of any ambient air quality standard. The District relied on the modeling that the applicant presented in the AFC. The PDOC contains no evidence that the District independently reviewed this modeling. This modeling demonstrates that the Project will cause new violations of H_2S and NO_2 ambient air quality standards and make worse existing violations of PM10 standards. Instead of critically reviewing this modeling, or preparing its own analysis, the District summarily dismisses these violations based on no representative background data. As discussed in Comment VI, there are other remedies for this problem, outlined in the EPA Guidance cited in District Rule 207 F.2.

We have serious concerns about the accuracy of the meteorology data used in the applicant's modeling. The accuracy of the air dispersion modeling depends on the validity of the meteorological data used. Preparing a representative meteorological data set can be a challenge in rural areas where the spacing between meteorological monitoring stations is relatively large. This was clearly the case for SSU6. Unfortunately, there are numerous problems associated with the meteorological dataset as summarized below. Many of these problems result in underestimating modeled ambient concentrations and hence Project impacts.

A. Wind Speed Conversion

There seems to be an unusual anomaly associated with the wind speeds in the meteorological data that was used in the dispersion modeling. The PCRAMMET program was used by the AFC to process the meteorological data. PCRAMMET uses the following FORTRAN code to convert the wind speed from miles per hour (mph) to meters per second (m/s):

```
WSPEED(IHR) = WSPEED(IHR) / 2.237
```

This code simply converts the wind speed for each hour (IHR or integer hour) from mph to m/s by dividing the wind speed in mph by a factor of 2.237.

The AFC's processed wind speed data is not consistent with this code, as one can see by comparing the original unprocessed meteorological data to the processed data as used in the ISCST3 model. This comparison is shown in Table 8.

Table 8
Wind Speed Conversion from mph to m/s

Date	*Hour*	*Wind Speed (mph)*	*Wind Speed (m/s)*	*Conversion Factor*
1/8/1995	6	2	1	2.000
1/1/1995	9	3	1.03	2.916
1/1/1995	3	4	1.54	2.592
---	---	5	---	---
1/1/1995	1	6	2.57	2.333
1/1/1995	6	7	3.09	2.268
1/1/1995	12	8	3.09	2.592
1/1/1995	15	9	3.60	2.499
1/1/1995	14	10	4.12	2.430
1/2/1995	12	11	4.63	2.376
---	---	12	---	---
1/5/1995	1	13	5.66	2.297
1/2/1995	11	14	6.17	2.268
1/10/1995	11	15	6.69	2.243
1/10/1995	12	16	6.69	2.392
1/4/1995	21	17	7.20	2.360
1/4/1995	19	18	7.72	2.333
1/5/1995	21	19	8.23	2.308
---	---	20	---	---

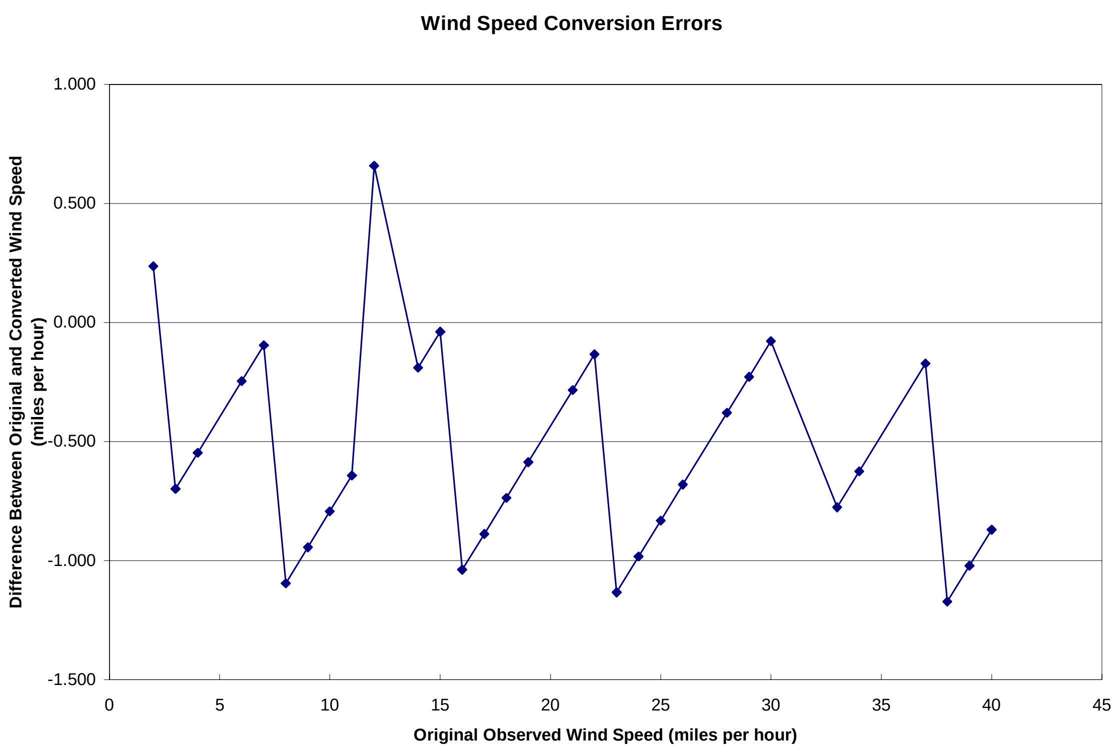
Table 8
Wind Speed Conversion from mph to m/s

Date	***Hour***	***Wind Speed (mph)***	***Wind Speed (m/s)***	***Conversion Factor***
Correct Conversion Factor				2.237

Clearly, the conversion factor should be the same regardless of wind speed. The peculiarity in the AFC's processed meteorological data cannot be readily explained, but varies with wind speed as shown graphically in Figure 1.

Figure 1

Imperial Meteorological Data Wind Speed Conversion Errors



It is unclear why the wind speed conversions would vary or if they have been altered prior to converting from mph to m/s, but it is clearly incorrect. The applicant, in response to a Energy Commission data request, contends that National Climatic Data Center ("NCDC") rounding errors have caused the differences in originally observed and converted wind speeds (the NCDC data reflect a conversion from metric to English units). However, rounding errors cannot account for the magnitude of the differences observed when comparing the NCDC data to the meteorological data processed by the applicant. It is possible that the applicant made additional data conversions and rounding errors, but it is unclear why this would be done. At wind speeds of less than 10 mph, the applicant's wind speeds contain errors ranging from 1 to 23 percent compared to the NCDC data. If the NCDC data contains similar rounding errors, the wind speeds used in the dispersion modeling could be as high as 50 percent.

Given the potential errors and uncertainty associated with the wind speeds, at a minimum, the meteorological data would need to be reprocessed to reflect observed conditions, as originally measured. Once the data has been reprocessed, the dispersion modeling should be redone to reflect the proper meteorological data.

B. Erroneous Wind Speed Data

It appears that some of the modeling was conducted using an older version of the ISCST3 meteorological data files where there are some obvious wind speed errors. For example, the ozone limiting method (OLM) modeling for construction NO_2 flagged two wind speeds that are out of range as follows:

3/7/97 @ 1200	74 mph
3/17/99 @ 1500	102 mph

The wind speeds immediately adjacent to these hours are all less than 10 knots. These values were corrected in the most recent version of the processed ISCST3 meteorological data with the substitution of a calm wind speed (0 m/s), but some of the dispersion modeling used the erroneous meteorological data files. The substitution of a calm wind also contradicts the guidance that was supposedly followed in processing the meteorological data (i.e., Lee, 1992) which specifies averaging the four hours surrounding the missing value.

C. Temperature Data

At least one hourly temperature is incorrect in the meteorological database. The value in the database for 7/3/1999 at 1200 is a whopping 361.5 K, or 191ºF. The project area can be quite warm, but not quite this hot. It is suggested that the applicant perform a QA/QC check on the data to make sure there are no other obviously incorrect temperature values. This can easily be done using a simple trend analysis and flagging all values that exceed the expected hourly temperature change.

D. Upper Air/Mixing Height

The AFC utilized upper air data from Tucson, Arizona for use in the PCRAMMET model to calculate hourly mixing heights. While the availability of quality upper data may be limited, the data from Tucson is a very poor representation of mixing height for the SSU6 Project site.

Table 9 provides a comparison of mixing height observations from Tucson, Arizona and sites located at Thermal and El Centro, California. These data clearly indicate that the data from Tucson is not representative of the project site, especially in the early morning hours.

Table 9
Summary of Regional Mixing Height Data

	Morning Mixing Heights (meters AGL)				
	Winter	***Spring***	***Summer***	***Fall***	***Annual***
Tucson (Holzworth)	247	260	356	241	276
Tucson (soundings)	429	675	644	354	478
Thermal (soundings)	7	49	18	7	20
El Centro (soundings)	---	---	---	---	---
	Afternoon Mixing Heights (meters AGL)				
	Winter	***Spring***	***Summer***	***Fall***	***Annual***
Tucson (Holzworth)	1,424	2,664	3,110	2,110	2,327
Tucson (soundings)	1,870	2,742	3,344	2,404	2,527
Thermal (soundings)	---	---	---	---	---
El Centro (soundings)	1,362	1,403	606	1,192	1,160

The rather unique conditions of the SSU6 Project site, especially the location in a basin below sea level, render the data from Tucson meaningless. The Project site also experiences a greater degree of influence from the semi-stationary North Pacific Subtropical High than is experienced in Tucson. This results in lower average mixing heights and stronger inversions, which are exacerbated by the elevation distribution of the Salton Sea Basin. This would result in higher ambient concentrations than predicted by the modeling presented in the AFC and relied on by the District.

There is no simple solution for obtaining representative upper air meteorological data other than the implementation of an on-site meteorological monitoring station equipped with a Doppler Acoustic Profiler. In the absence of representative measured upper air data, the AFC should utilize boundary layer meteorological theory to model hourly mixing heights. There are numerous models and methods available that could be utilized to estimate hourly mixing heights and to validate against observed conditions at Thermal and El Centro. Alternatively, the District could require that the applicant collect 1-year of on-site, upper air data prior to the start of construction and issuance of an Authority to Construct.

Given the uncertainty in the validity of the meteorological data, the meteorological data should be reprocessed correctly and the dispersion modeling redone to assure that the Project will not adversely impact air quality, as required by District Rule 207 F.

XI. VISIBILITY NOT CONSIDERED

Rule 207 D.6.f requires an Authority to Construct to address the potential to impact air quality, including visibility of any Class I federal areas. (Rule 207 D.6.f.) The PDOC did not address visibility impacts, which may be significant.

A Class I visibility impact analysis was conducted for the SSU6 Project in the AFC using the CALPUFF modeling system, but was not reviewed in the PDOC. Acid deposition and secondary pollutant impacts were also evaluated as part of this analysis. The results of this modeling showed that potential impacts to visibility in nearby Class I areas would be insignificant. However, there are several problems with the visibility modeling.

A. Meteorological Data

The meteorological data used in the analysis is different than the data used for the air quality analysis using ISCST3 and is probably not representative of the site or modeling domain. It may be more appropriate to evaluate meteorological data from a number of monitoring sites, using the most representative site for each parameter. For almost all parameters, data is available closer to the project site that would be far more representative of regional conditions than the data from Daggett/Barstow Airport and Desert Rock, Nevada used in the visibility modeling.

B. CALPUFF Chemistry Assumptions

The Project would emit substantial amounts of ammonia that were not considered in the CALPUFF model simulations. The CALPUFF model chemistry includes numerous reactions that involve ammonia, but the model does not allow for ammonia emissions to be considered in source emission inventory. However, these emissions can be considered by including them in the background ammonia concentration, which is a model input.

The Applicant's CALPUFF modeling used an ammonia background value of 10 ppb, which is the model default value. However, this is not appropriate here because the SSU6 Project would emit very large amounts of ammonia, up 20,274 lb/day. The Applicant's own dispersion modeling indicated that the SSU6 project will elevate background ammonia values far above the assumed 10 ppb level as shown in Table 10.

Table 10

SSU6 Ammonia Modeling Results (ppb)

Year	***1-Hour***	***24-Hour***	***Annual***
SSU6	1,584	414	31.5
	1,631	399	36.1
1997	4,126	569	33.7
1998	1,698	581	38.8
1999	1,621	544	38.9

Given the importance of ammonia in the formation of secondary particulate and visibility impairment, the modeling should be redone using the modeled 1- or 24-hour concentrations listed above. This would allow for a better estimate of the potential impacts associated with the project's ammonia emissions on Class I visibility. As proposed, the PDOC's failure to conduct any visibility analysis violates District Rule 207 D.6.f.

XII. THE PROPOSED CONDITIONS ARE NOT ADEQUATE

The PDOC recommends 13 conditions for the CEC to consider. These conditions do not satisfy the Energy Commission's obligation to assure compliance with all laws, ordinances, regulations and standards, are not consistent with permits issued for other similar facilities, are not consistent with the District's own summary in Section B of the PDOC, and do not assure compliance with the District's rules and regulations.

A. Condition 1

This condition requires the permitee to control fugitive dust emitted during the construction, handling, or hauling of any product, or from traveled roads. (PDOC, p. 19.) This condition is not specific enough to allow the Energy Commission to draft conditions of certification or verification procedures. The condition also fails to require that the Project comply with Rule 800, which covers a wider range of fugitive dust sources than specified in the condition. This condition should be redrafted to require compliance with Rule 800, to identify the sources of fugitive dust that must be controlled, to specify an emission control target, and to identify specific measures that will be implemented to control fugitive dust.

B. Condition 4

This condition identifies proposed controls and emission limits. (PDOC, p. 20.) The condition is incomplete and the proposed limits are not enforceable as a practical matter.

1. Emergency Generators and Fire Pump Diesel Engines Omitted

As discussed in Comment IX.B and acknowledged in the PDOC itself, BACT for NOx is required for the standby diesel generators and fire pump. (PDOC, p. 4.) However, none of the proposed conditions, and specifically Condition 4, which specifies controls and emission limits, requires BACT for these engines. In fact, none of the proposed conditions mention these engines. Thus, this condition should be modified to list the diesel engines as sources, to specify BACT control (Comment IX.B), and to set emission limits on NOx, PM10, CO, VOC, and SO_2. The NOx limit should be set consistent with the BACT determination, discussed in Comment IX.B. The limits on the other criteria pollutants should be set consistent with the assumptions used in making the analyses to determine compliance with all District regulations. (Rule 207 D.6.b and D.6.c.)

Further, the emissions from these engines are based on the assumption that they only operate 100 hr/yr. (PDOC, p. 26.) The District's regulations require that the Authority to Construct contain all conditions to assure operation in the manner assumed in making the analysis to determine compliance. (Rule 207 D.6.b and D.6.c.) However, none of the 13 proposed conditions limits the operation of these engines to only 100 hr/yr. Further, none of the 13 conditions contain any compliance provisions to assure that the engines only operate 100 hr/yr. Condition(s) should be added to restrict the hours of operation to 100 hr/yr and to require the installation of an hour meter to assure compliance with this limit.

2. Drill Rig Diesel Engines Omitted

As discussed in Comment IX.C, BACT for NOx and PM10 is required for the drill rig diesel engines. However, none of the proposed conditions, and specifically Condition 4, which specifies controls and emission limits, requires BACT for these engines. In fact, none of the proposed conditions mention these engines. Thus, this condition should be modified to list the drill rig diesel engines as emission sources, to specify BACT control (Comment IX.C), and to set emission limits on NOx, PM10, CO, VOC, and SO_2. The NOx and PM10 limits should be set consistent with the BACT determination, discussed in Comment IX.C. The limits on the other criteria pollutants should be set consistent with the assumptions used in making the analyses to determine compliance with all District regulations. (Rule 207 D.6.b and D.6.c.)

We also note that permits issued by the District to drilling companies have contained far more conditions than recommended here for the PDOC, including the following (See C&L Drilling Co. Permit No. 3189 (April 18, 2002)):

- Offset requirements
- Emission controls
- A log showing hours of operation and routine repairs to the engines, including total gallons of fuel burned each day
- An opacity limit
- A flow meter on the outlet of the diesel fuel distribution tank
- A limit on the maximum amount of fuel that can be consumed per day
- An hour meter on each engine
- An annual report containing daily fuel consumption and hours of operation

Similar conditions should be included in conditions recommended to the CEC.

1. Cooling Towers PM10 Limits Omitted

The PDOC concluded that BACT for the cooling towers is a 0.0005% drift eliminators to control PM10. (PDOC, p, 3.) However, Condition 4, which specifies BACT and emission limits, does not identify the drift eliminators as BACT for PM10. Condition 4 also does not include a PM10 emission limit to enforce the BACT determination.

2. The Proposed Emission Limits Are Not Federally Enforceable

A permit limit must be federally enforceable. This requires that emission limits be expressed in two different ways, with one value serving as an emission cap (e.g., lb/hr) and the other ensuring continuous compliance at any operating capacity (e.g., lb/MMBtu, ppm). (NSR Manual, pp. B.56, H.5.) The proposed limits in Condition 4 are expressed only as lb/hr, with no continuous limit. As explained by the U.S. EPA, "[b]lanket emissions limits alone (e.g., tons/yr, lb/hr) are virtually impossible to verify or enforce, and are therefore not enforceable as a practical matter." (NSR Manual, p. c.4.) Thus, Condition 4 should be expanded to include instantaneous limits, as well as lb/hr limits, for all pollutants and sources.

A permit limit must be practically enforceable to be federally enforceable. This requires that the limit contain appropriate averaging times, compliance verification procedures, and recordkeeping procedures. (NSR Manual, p. B.56.) The proposed conditions contain no compliance verification procedures for the dilution heater and benzene emissions from all sources (save a single, initial source test conducted on startup). Further, the permit limits do not appear to contain any averaging times. (*See* Comment XII.B.5.)

5. Averaging Time Ambiguous

All of the emission limits in Condition 4 are expressed as pounds per hour per 24 hours or "lb/hr/24 hr." The intent of this condition is unclear. We are uncertain whether the District wishes to indicate a daily emission limit, to comply with Rule 207 D.6.d, or a 24-hour averaging time for the stipulated limit. Condition 11 suggests that the latter is intended, as compliance reporting is based on a 24-hour average. (PDOC, pp. 21-22.) If a 24-hour averaging time is intended, this is unacceptable for several reasons.

First, the averaging time should be consistent with the averaging times used for dispersion modeling. (NSR Manual, p. H.5.) The California H_2S standard is based on a 1-hour average. Thus, the dispersion modeling was based on a 1-hour average, and all of the H_2S limits should be expressed as 1-hour averages.

Second, to be practically enforceable, a limit must be expressed in such a manner that an inspector can verify at any moment whether the source is or was complying with the permit conditions. Therefore, short-term averaging times are essential. (NSR Manual, p. c.4.)

C. Condition 11

This conditions establishes emission reporting requirements for several emission sources. This condition should be expanded to requirement reporting of BACT PM10 and NOx limits for sources subject to BACT. Compliance with the cooling tower PM10 offset provisions and PM10 BACT limit, for example, should be enforced by requiring daily measurements of circulating water flow and circulating water TDS, annual testing by a CTI certified test firm to verify the drift eliminator efficiency, and reporting of same.

D. Condition 12

Condition 12 requires a performance source test after the start of commercial operations for 13 constituents. This condition is not adequate to demonstrate compliance with the proposed permit conditions for a number of reasons.

1. Not Enforceable As A Practical Matter

Condition 12 is not enforceable as a practical matter, because it does not require that the source be constructed to accommodate such testing, it does not establish procedures for establishing an exact testing protocol, and it does not contain requirements for regulatory personnel to witness the testing. (NSR Manual, p. H.6.)

2. Testing Frequency Inadequate

Condition 12 only requires a single source test, upon start of commercial operation. A permit must demonstrate continuous compliance where feasible, and otherwise, periodically. (NSR Manual, p. H.6.) Permits for the existing geothermal facilities, for example, require an initial source test and follow-up tests every four years thereafter. See existing permits for Vulcan, Leathers, Elmore, and A.W. Hoch. Further, the PDOC's Rule Applicability Summary in Section B states that the offgas line and cooling tower exhaust would be tested every 4 years after an initial compliance test. (PDOC, p. 3.) However, SSU6 is *substantially larger* than any of the existing facilities and will use state-of-the art pollution control equipment without a well established track record. Therefore, we recommend that source tests be conducted a minimum of twice per year for the first two years of operation, and every other year thereafter.

3. Sources Not Identified

Condition 12 does not identify the source(s) that would be tested. The condition should be revised to require testing at each of the following: cooling tower exhaust, cooling tower circulating water, cooling tower blowdown, dilution water heaters, vent tank, hot well condensate, inlet and outlet of the H_2S control system, inlet and outlet of the benzene control system, fire water pump, emergency diesel generators, and drill rig engines. Permits for the existing geothermal facilities, for example, require source tests for hot well condensate, cooling tower blowdown, and noncondensible gases.

4. All Regulated Parameters Not Identified

Condition 12 specifies 13 substances that must be monitored. This list does not include several substances that should be monitored to verify the total emission inventory for purposes of Title V. (PDOC, p. 5; Rule 900). This list also does not include several substances that should be monitored to determine if BACT has been properly applied (Rule 207 C.1.c) and is complied with, to determine if emission limits have been met, and to determine if emissions have been properly offset.

The AFC indicates that the following metals may be expected in the exhaust from the dilution heaters: arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, and zinc. (AFC, Table G-9.) Heavy metals from the dilution heaters are limited to <0.55 lb/day. (PDOC, Condition 4.) However, Condition 12 does not require monitoring for most of metals in the dilution heater exhaust. In addition, the PDOC does not require BACT for any of these substances. Under the District Rule 207 C.1.c, BACT is required if lead exceeds 3.3 lb/day, beryllium exceeds 0.0022 lb/day, mercury exceeds 0.55 lb/day, and fluorides exceeds 16 lb/day. The PDOC should be revised to require monitoring of all listed substances to confirm whether BACT is required.

Similarly, the AFC contains no information on fluoride emissions, even though it is elevated in produced brines. Under the District Rule 207 C.1.c, BACT is required if fluorides exceeds 16 lb/day. Thus, it is not possible to determine if BACT is required for fluoride without collecting data. (AFC, Table 3.3-1.) The PDOC should be revised to require monitoring of fluoride to confirm that BACT is not required.

In sum, the following should be added to the list of substances that must be monitored in Condition 12 of the PDOC: lead, beryllium, boron, cadmium, chromium, copper, manganese, mercury, nickel, selenium, zinc, fluorides, ammonia, PM10, CO, and VOCs. As proposed, the PDOC lacks sufficient monitoring requirements to determine if BACT is required.

XIII. THE LACK OF INFORMATION DEPRIVES OTHER AGENCIES AND THE PUBLIC OF AN OPPORTUNITY FOR MEANINGFUL REVIEW

District Rule 207 D.9 and Rule 206 describe procedures for public and agency review of the PDOC and provides an opportunity for comment on the report's recommendations. The rules require, among other things, a preliminary written decision sufficient to enable CARB, USEPA and any person to recommend approval or disapproval of the preliminary decision. The PDOC fails to provide these agencies and the public with enough information to comment on offsets and BACT in a meaningful way.

XIV. UNDER THE STATE SIP, ONLY THE IMPERIAL COUNTY AIR DISTRICT IS AUTHORIZED TO ISSUE AN AUTHORITY TO CONSTRUCT FOR SSU6

California's State Implementation Plan ("SIP") delegates to the ICAPCD the authority to issue permits and monitor new and modified sources of air pollutants to ensure compliance with national, state, and local emission standards and to ensure that emissions from such sources will not interfere with the attainment and maintenance of ambient air quality standards adopted by the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency. (Health and Safety Code §§ 39002.) The ICAPCD cannot, in turn, delegate this authority to the Energy Commission.

Under the federally approved SIP, only the District has authorization to issue a determination of compliance and shall not issue such determination unless all requirements of the District's new source review rules, state law and federal law are met. (Rule 207 D.9.e.2.) The California Energy Commission does not have the authority under federal law to perform the District's functions or issue an authority to construct permit. If an air district's authority to construct delegates to the Commission the power to determine whether a stationary source complies with a local, state or federal rule, such delegation would be void and unenforceable as against public policy. (*See, Orange County Air Pollution Control District v. Public Utilities Commission* (1971) 4 Cal. 3d 945 [95 Cal. Rptr. 17]; *Standard Oil Co. v. Feldstein* (1980) 105 Cal. App. 3d 590 [164 Cal. Rptr. 403], *citing Avco Community Developers, Inc. v. South Coast Regional Com*. (1976) 17 Cal. 3d 785, 800 [132 Cal. Rptr. 386, 553 P.2d 546].)

The District's rules set forth a clear process for conducting a determination of compliance review and deciding whether to approve, conditionally approve, or disapprove an Authority to Construct. Under District Rule 207 D.9.b, upon receipt of an AFC for a power plant, the ICAPCD shall conduct a determination of compliance review. The District shall consider the AFC to be the equivalent of an application for an authority to construct during the determination of compliance review, and shall apply all provisions of the District's new source review rules to the application. First, the District must make a preliminary decision and publish a notice providing at least 30 days for CARB, the U.S. EPA, and the public to submit written comments about the preliminary decision. The District must consider all written comments and make a final decision to approve or deny the application.

In this case, the ICAPCD seems to be under the mistaken impression that the Energy Commission performs the functions normally performed by the District. The District is acting as an agency submitted comments to the CEC, rather than as the only agency power to issue the authority to construct permit. It improperly delegates its authority to conduct a determination of compliance review to the Energy Commission. The PDOC does not identify federally enforceable offsets. The PDOC does not analyze and identify offsets for all emissions sources in the SSU6 stationary source. The PDOC's conditions are not specific enough to allow the Commission to draft conditions of certification or verification procedures. The PDOC's conditions fail to identify many sources of emissions that must be controlled, fail to specify emission control targets, and fail to identify specific measures that will be implemented to control emissions. These inadequacies in the

District's PDOC constitute an improper delegation of the District's jurisdiction to determine whether the proposed SSU6 project complies with District rules and state and federal air quality laws.

The District must issue a new PDOC that complies with all of the requirements of a draft authority to construct permit.

Thank you for the opportunity to comment on the PDOC. Please feel free to call if you have any questions about these comments.

Sincerely,

Tanya A. Gulesserian

TAG:bh
Enclosures
cc: Proof of Service 02-AFC-2